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UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Agricultural Engineering
MONTHLY NEWS LETTER

Vol. 5.

December 25, 1935.

No. 4⁶

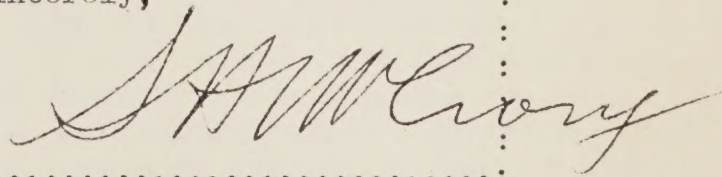
M E R R Y C H R I S T M A S

and

H A P P Y N E W Y E A R

It is with genuine satisfaction that I
review the year's work which has been carried on by
each member of the bureau staff, sometimes under
extreme difficulties. I appreciate the personal
loyalty to me and the devotion of each member to
his job. I am glad on this occasion to wish each
one a Happy Holiday Season and a New Year of good
health and good cheer.

Sincerely,



UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
WASHINGTON, D. C.

Report of the
Commissioner of Plant Industry
for the year 1907

Presented to the Senate and House of Representatives
at their special session, July 1, 1908

By
J. H. COOPER, Commissioner

Published by the
Government Printing Office

Washington, D. C., 1908

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staff only)

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Mr. McCrory has noted the following poem by Capt. C.A. Miller which appeared in the first issue of a CCC camp newspaper published by Veteran Co. No. 1573, Delaware, Ohio.

.....
: "There's going to be a vacancy above you later on, :
: Some day you'll find the Leader or Assistant Leader gone, :
: Are you growing big enough when this shall be the case, :
: To quit the post you're holding now and step into his place? :
: :
: You do the work you have to do with ease from day to day, :
: But are you getting ready to deserve the larger pay? :
: If there should come a vacancy with bigger tasks to do, :
: Could you step in and fill the place if it were offered you? :
: :
: Tomorrow's not so far away nor is the goal you seek, :
: TODAY you should be training for the work you'll do next week, :
: The bigger job is just ahead, each day new changes bring - :
: Suppose that post were vacant now - Could you take charge of :
: things? :
: :
: It's not enough to know enough to hold your place today :
: It's not enough to do enough to earn your weekly pay, :
: Some day there'll be a vacancy with greater tasks to do - :
: Will you be ready for the place when it shall fall to you? " :
:
:
:

: In a recent decision of the Comptroller General it was :
: held that, where a transportation book was lost and fraudu- :
: lently used, the employee to whom the book was issued was :
: held responsible for the cost of such travel. Care should be :
: taken at all times to properly safeguard transportation re- :
: quests, and in no event should the transportation identifica- :
: tion card or other identifying papers be carried in the :
: transportation book. :
:
:

Mr. S. H. McCrory, Chief of Bureau, visited the Cotton Ginning project at Stoneville, Miss., on December 9 and 10. Dr. R.W. Webb, Senior Cotton Technologist, Division of Cotton Marketing, Washington, D.C. also visited the laboratories. A delegation of Texas cotton ginners from northeastern Texas visited the laboratories on December 12.

The December, 1935, issue of the Texas Cotton Ginner's Journal will contain an article entitled "Cleaners and Extractors" by Chas. A. Bennett and F. L. Gerdes.

Victor L. Stedronsky and R. C. Young have gone to Arizona, where ginning tests will be conducted in the Salt River Valley regions in cooperation with the Bureau of Plant Industry.

O.M. Page, Agricultural Engineer, has completed for the War Department a preliminary appraisal of the lands affected by a proposed flood control reservoir at Sardis, Miss. This work involved the appraisal of 114,963.84 acres of land, including buildings, with a total value of \$1,655,997.71. Mr. Page was assisted by Walter A. Vaught, Associate Drainage Engineer of this Bureau and five appraisers.

A conference on the drainage work of the CCC camps was held in Chicago, December 3 to 5. It was attended by Mr. McCrory, L.A. Jones, J. G. Sutton, R.W. Carpenter, C.E. Jacoby, F. F. Shafer, George Burnet and H. G. Edwards.

In 6 Central States the drainage enterprises have agreed to furnish 46 excavating machines, and three-fourths of these are in operation. The value of the cooperation amounted to about \$49,000 in October and November.

The practice of requiring drainage districts to fence and pasture levees after the camps clear them was commended.

According to J. G. Sutton, 36 camps in the central district excavated 432,351 cubic yards in November. The clearing done in November, amounted to 7,830 square yards.

It is reported that one drainage district in Illinois, which had planned to levy an assessment of \$40,906 for maintenance work, was able through the assistance of a CCC camp to perform the work at a cost of \$8,445.

Camp D-3 reported a total excavation of 62,782 cubic yards in November, due in part to the cooperation of the counties in which the camp is working.

Tile buried for 11 years in peat soil in Wisconsin were taken up recently by D. G. Miller. The portland cement tile showed marked deterioration while the high-alumina tile showed no deterioration whatever.

In order to study the hydraulic elements of the flow of 1,800 second-feet of water through a supported 10-foot steel pipe line which the Fort Lyon Canal Co., Las Animas, Colo. proposes to build at a cost of \$32,000 over Horse Creek Arroyo, to replace the present wooden flume, a model of this structure on a scale ratio of 1 to 25 is being constructed at the Fort Collins laboratory under the supervision of R.L. Parshall and Carl Rohwer, the object being to ascertain the proper entrance transition and to observe the effect of the outlet velocities in the channel downstream.

Preparation for the resumption of tests at the silt laboratory constructed at the Rositas Dam on the Alamo River near El Centro, Calif., last spring, was begun by R.L. Parshall, who arrived at El Centro Nov. 23. The work of cleaning channels and strengthening the banks, especially the banks of the outlet channel, was started by a crew of men on Nov. 25. The flume was later sluiced clear of deposit.

Meetings of the Association of Western State Engineers and of the National Reclamation Congress, held at Salt Lake City Nov. 12-16, were attended by W.W. McLaughlin, R.L. Parshall, and J.C. Marr. Mr. Marr gave a talk on "Snow Cover Measurements and Irrigation Water Supply Forecasts under Federal Leadership."

An article entitled "Frozen Assets", describing our Bureau's activities in snow surveying in southern Oregon, was prepared by R.A. Work for publication in the Medford, Oregon "Pear-O-Scope."

Measurements to determine the effect on percolation of irrigation water in furrows when the water is turned on intermittently were made by Colin A. Taylor. It is of practical use in getting water to the end of a furrow in a relatively short time, thereby promoting a more even distribution of water along the furrow. Pairs of furrows are used and a large flow is first turned into one of the pair. When the water has progressed to a point about one-half way along the row, the entire flow is shut off from that furrow and turned into the second furrow. After it has passed the one-half way mark in the second furrow, it is again turned back to the first furrow. When the water reaches about three-fourths of the distance to the end of the first furrow, the flow is divided between the two furrows and set for the remainder of the run. It has been found that this operation may be used to decrease the rate at which water is absorbed near the upper end of furrows.

Experiments to determine the rate at which moisture will flow through different soils in response to capillary forces were begun under the supervision of M.R. Lewis as a W.P.A. project sponsored by the Oregon Agricultural College. Series of tubes, 2, 4, and 6 inches long containing soil with undisturbed field structure, as far as possible, closed at one end with tight-fitting corks and covered at the other end with heavy cheese-cloth, are used. The cloth-covered ends are exposed to a current of air of constant temperature and humidity. The tubes are weighed periodically and sufficient water is added at each weighing to equal certain rates, for example 25, 50, and 100 mgs. per hour, of water loss for the time elapsed between weighings. This is continued until the rate of loss agrees, more or less exactly, with the rate of addition, thus indicating a state of dynamic equilibrium. The soil columns are then broken down and the moisture content in each unit of length determined.

R.B. Gray and W.M. Hurst attended the A.S.A.E. meeting at Chicago December 2 to 4, where Mr. Hurst presented a paper discussing field tests made on combines during the past season. He stated that the size of the machine used did not appear to have much influence on losses. Machines varying from 5 ft to 12 ft. in cutter-bar length were tested. Mr. Hurst spent a day with the John Deere Co. at Moline, Ill., discussing farm machinery matters including the soybean row crop harvester. Mr. Gray returned to Washington by way of Auburn, Ala. where he discussed with Bureau and Station representatives future plans for the cotton production machinery project.

There are indications that the sugar-beet harvester which E.M. Mervine and S.W. McBirney tested in California during August and later in Colorado will be commercially acceptable. On December 6 Mr. Mervine conferred with the manufacturers, Scott-Viner in Columbus, Ohio, and as a result they have decided to build possibly three machines for California use and three machines for medwestern use. These harvesters dig the beets, cut off the tops, and make separate piles of cleaned beets and of tops. One tractor operator and one harvester operator do the work of about a dozen hand toppers.

Shortage of sugar-beet topping and loading labor has stimulated the interest of the Spreckels Sugar Co., operating in the Davis, Calif. territory, in equipment which will reduce the spring and fall labor peaks of sugar beet production. They asked for a conference to learn in detail of the experimental work which has been done along that line. As a result they have included an item of \$4,500 in their next year's budget for experimental work on sugar-beet equipment and are asking for further cooperation on the work.

S.W. McBirney attended the annual southern California sugar beet conference at Santa Barbara on Dec. 11 and gave a talk on Hill Planting of Sugar Beets.

E.M. Dieffenbach reports that he is investigating the possibility of mounting a series of nozzles on a mast for row spraying of orchard trees such as the pecan, in order to be able to use lower pressures.

W. R. Humphries and G.R. Stafford spent the first week in December in testing small combines in harvesting soybeans in the vicinity of Norfolk, Va. and Elizabeth, N.C. Harvesting losses were generally high, due to the advanced stage of maturity of the crop, but machine or threshing losses only slightly higher than would be expected under normal conditions.

R.M. Merrill attended the A.S.A.E. meeting at Chicago, Dec. 2 to 4, where he presented a paper on the engineering aspects of insect pest control. He stated that the Hi-pressure Jenny, a vapor pressure outfit, showed promising results both from the standpoint of excellent coverage and economy in the use of poison spray material.

G.A. Cumings attended the annual meeting of the National Joint Committee on Fertilizer Application in Chicago on Dec. 4. Studies recently inaugurated with kale, spinach, tomatoes, and peas indicate that due consideration should be given to the placement of the fertilizer. Severe injury to the seed and seedlings of kale, spinach and peas occurred when fertilizer was placed either under the seed, or with it in the furrow. On these crops, as well as tomatoes, greatest benefit was obtained where the fertilizer was placed in a band either at one or each side of the row. Placement of the fertilizer only at the hill, for potatoes and tomatoes, was indicated as superior to placing the same amounts in continuous bands along the row. The Bureau of Agricultural Engineering was given credit for providing special equipment, and otherwise assuming obligations without which the existing extensive research program could not have been developed.

Observations by E.D. Gordon at Jeanerette, La., on the drying of soybeans at various stages of maturity brought out the fact that, on the basis of 100 pounds of protein, the drying cost for soybeans having 115 to 118 day growth was a trifle over 10 percent greater than for soybeans having an 80 to 82-day growth before harvesting. The average protein content of the 115 day growth soybeans was 10.9 percent, while that for the 80-day growth soybeans was 13.35 percent.

Wallace Ashby attended the A.S.A.E. meeting at Chicago December 2, 3, and 4 where he discussed the proposed project on the study of grain bins for use in farm storage.

Publications issued:

Annual Report of Bureau, 1935.

History of grain drills (mimeographed)